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ABSTRACT

The study compared play among five groups of children (ages 3-7 years): normal children (N=41); those diagnosed with language delays (N=241), those with autism but normal intelligence (N=71), those with autism and mental retardation (N=97), and those with nonautistic mental deficiency (N=86). Each child was evaluated using a 25 minute structured play session which was videotaped for later analysis. The child's activities were classified into 11 types falling into 5 categories: passive sensory-motor play; active sensory-motor play; functional play; symbolic play; and no toy play. Results indicated that the development of play, especially the later emerging symbolic type, is dependent on cognitive abilities and social comprehension. The children with the most noticeable deficit in symbolic play were the autistic groups, with the deficit more profound in the low IQ group. An unexpected finding was that although language also requires symbolic representation, those children with language impairments did not demonstrate significantly less symbolic play. Members of all groups chose approximately the same number of toys during a typical play session. Includes 5 references. (DB)

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Symbolic Play Development in Autistic and Language Disordered Children

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Introduction

Children's play develops in a sequential manner, progressing from sensory-motor manipulation of toys, through functional use of objects to symbolic representational play. Symbolic play generally emerges at the end of the first year, beginning as a simple use of a toy as if it were the real item that it depicts. (e.g., a toy car is animated with motor sounds.) This is followed by the development of substitution play in which an item is made to represent something else (e.g., a block becomes a telephone receiver). Finally, children begin to exhibit true imaginary play, in which increasingly complicated events and/or relationships are acted out, first with limited props and finally, as in the case of imaginary companions, without any real objects of representation (McCune-Nicolich, 1981).

This developmental process is increasingly dependent upon adequate skills of mental representation, presumably similar to those employed in the use of language. This suggests a critical link between the development of language and symbolic play. Further interdependence of language and play appears in later stages of symbolic play as language becomes an important means to communicate aspects of the imaginary scenario to playmates.

In addition to this link with language, symbolic play also relies on social awareness. As the play scenarios become more complex they almost always contain themes which model common social interactions. Therefore, as the content of symbolic play becomes more elaborate, a child's understanding of the social world may also become a critical factor in the ability to create and maintain pretense play.

The relationship of play to language and social awareness make the evaluation of a child's play activity an important additional measure of cognitive and social development. This evaluation may be especially important in discriminating between diagnostic populations which have known deficits in cognitive and/or social development. Language disorders in children have been shown to be correlated with delayed development of symbolic play (Kamhi, 1981; Terrell, Schwartz, Prelock and Messick, 1984). In addition to language impairments, autistic children would presumably lack social knowledge and motivation for modeling social interaction as a result of their social/affective deficits. Autistic children have, in fact, also been shown to have impaired symbolic play development (Riguet, Taylor, Benaroya and Klein, 1981; Ungerer and Sigman, 1981).

For this reason we looked at the differences between the play of

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four groups of children, including normal children and those diagnosed with language delays, autism and mental retardation. We believed that comparison of play in these groups would allow us to clarify the roles of general functional IQ, language capability and sociability in the development of a child's play. In particular, it was predicted that the autistic children would show less symbolic play, due to their limited social motivation and comprehension, than language disordered children matched to the autistic group for verbal and non-verbal MA and presumably also handicapped in symbolic functions.

Method

The children in the study represented the following diagnostic groups: 241 with developmental language delay (DLD), 71 with autistic spectrum disorder - normal IQ (high ASD), 97 with autistic spectrum disorder - low IQ (low ASD), 86 with nonautistic mental deficiency (NAMD) and 41 chronologically age matched normal children. The DLD children had discrepant verbal and nonverbal IQ scores with the later falling within the normal range. The autistic children were diagnosed using the criteria of DSM III-R. The NAMD children had both verbal and nonverbal IQ's below 80. All the children ranged in age from three to seven years eleven months.

Each child was evaluated using a 25 minute structured play session which was video taped for later analysis. A specific set of toys was used which covered the range of developmental levels, including sensory-motor, functional/constructional and symbolic toys. The session consisted of three parts, beginning with five minutes in which the child played alone with the experimenter and a familiar adult in the room. This provided a measure of the child's spontaneous play and independent choice of activity. A second section consisted of the experimenter playing with the child for 15 minutes while the familiar adult was absent. During this portion of the session the first experimenter acted as a passive but willing participant in any child initiated play. Later, the experimenter became more directive, attempting to elicit the highest level of play that the child could produce. The final five minutes consisted of the familiar adult playing with the child. This was included to allow for comparison of play with unfamiliar and familiar adults. This portion of the play session was not used in the current analysis.

Data was collected from the video tape records using time sampling of three designated periods of the session. Sample one was representative of the child's play alone while the other two samples were collected during the play with the experimenter. Each sample consisted of three consecutive minutes divided into nine 20 second segments. Trained observers identified the type of play in which the child was engaged as well as the specific toy being used. The child's activity was designated as one of the following eleven types, falling into five specific categories:

Passive sensory-motor play
looking but not touching
holding passively - not looking
holding and looking passively
mouthing, sniffing etc.

Active sensory-motor play
active manipulation
waving, banging, throwing
combinatorial play

Functional play
functional use
constructional play

Symbolic play
symbolic inanimate
symbolic animate
substitution
imaginary

no toy play
no play with toys
can not see subject

Inter-rater reliability for toy and play codes ranged from r = .7 to r = .9.

Results

Specific play codes were collapsed for analysis into the five types of play including: passive sensory-motor play, active sensory-motor play, functional play, symbolic play and no toy play. Data analysis included evaluation of the diversity of play, based on the number of toys a child chose to use, and the relative distribution of time during each sample that the child was engaged in each of the five categories of play. This was measured as a ratio of the time spent in a specific play category compared to all categories.

The tables below show the percentage of each type of play that occurred by group and sample, analyzed using analysis of variance. There were more significant outcomes in samples 2 and 3, when the child was engaged in play with the experimenter. Of particular note are the significant outcomes in the play categories of active manipulation, symbolic play and no toy play. Post hoc comparisons showed that some of the differences occurred between groups of differing IQ's, thereby confirming the role of IQ in the development of play. Significant comparisons between groups of comparable IQ (normal vs. High ASD, normal vs. DLD, DLD vs. High ASD, Low ASD vs. NAMD) helped to clarify the influence of diagnostic category.

There were no significant differences between DLD children and normals. There were, however, differences between High ASD and normal groups and High ASD and DLD groups. In both of these comparisons, the ASD group had less symbolic play (sample 3; $p < .05$) and more passive or active play (sample 3:$p < .05$) Differences also existed between Low ASD and NAMD groups in the area of symbolic play. Again, there was less symbolic play in the ASD children's play (sample 2 & 3; $p < .004$) In sample 2 the High ASD group and in samples 2 and 3 the low ASD group had more "no toy play" than their respective IQ matches ($p < .005$) Finally, in samples 2 & 3 the High and Low ASD groups differed significantly from each other on the amount of active sensory-motor and symbolic play in which they engage. The High ASD group has more symbolic and less sensory-motor play than the Low group ($p < .003$). This same pattern did not occur in comparisons of normal and NAMD children.

Percent of Play by Type

Passive Sensory-Motor

	Normal	DLD	High ASD	Low ASD	NAMD	p
sample 1	15	18	24 *	29	23	.0006
sample 2	25	22	24	28	30	.04
sample 3	22	24 +	30 *	32	30	.0007

Active Sensory-Motor Play

	Normal	DLD	High ASD	Low ASD	NAMD	p
sample 1	24	24	24	29	21	NS
sample 2	15	10	12 ++	20	17	.0001
sample 3	14	13 +	17 ++	26 **	19	.0001

Functional Play

	Normal	DLD	High ASD	Low ASD	NAMD	p
sample 1	35	29	25	19	20	.005
sample 2	34	37	31 ++	21 **	33	.0004
sample 3	36	35	30	26 **	36	.03

* significant difference - High ASD vs. normals
** significant difference - Low ASD vs. NAMD
+ significant difference - High ASD vs. DLD
++ significant difference - High ASD vs. Low ASD

Symoblic Play

	Normal	DLD	High ASD	Low ASD	NAMD	p
sample 1	4	3	5	2	3	NS
sample 2	25	21	14 * ++	3 **	14	.0001
sample 3	25	25 +	16 ++	4 **	13	.0001

No Toy Play

	Normal	DLD	High ASD	Low ASD	NAMD	p
sample 1	22	26	22	21	33	NS
sample 2	1	10	18 * .	28 **	6	.0001
sample 3	3	3	6 ++	12 **	4	.0001

* significant difference - High ASD vs. normals
** significant difference - Low ASD vs. NAMD
+ significant difference - High ASD vs. DLD
++ significant difference - High ASD vs. Low ASD

Discussion

These results indicate that the development of play, especially the later emerging symbolic type, is dependent on cognitive abilities and social comprehension. The children with the most noticeable deficit in symbolic play were the ASD groups, with the deficit being more profound in the low IQ group. This supports the prediction that the social/affective deficits of autism inhibit the development and/or use of symbolic play. It is interesting to look at this in light of these children's increased frequency of no toy play. This category represents behaviors ranging from ignoring the toys and experimenter to perseveratively talking about a topic of special interest to the child. This group may not only lack the knowledge/ability to play symbolically but also the motivation to engage in this type of interaction.

An unexpected finding was that although language also requires symbolic representation those children with impairments did not have significantly less symbolic play. This is in opposition to previous literature. We believe that this may reflect our play paradigm in which the children are asked to play for an extended period of time. This may allow them to become more comfortable with the experimenter and let them engage in play regardless of their communication difficulties.

The small proportion of symbolic play in sample one (play alone) regardless of diagnostic group is of interest. This could be an artifact of the method of collecting data. It is difficult for an observer to identify symbolic use of items without accompanying language and most of the children played silently during their time alone. This may also reflect the strong social aspects of symbolic play. When another individual was not available to participate the child may have been less likely to engage in play of this kind.

Also of note is the nonsignificant outcome in terms of diversity of play as measured by number of toys chosen. This measure yielded an average of approximately three toys per sample regardless of group. This was an unexpected result. We had anticipated the number of toys that were used would be related to the degree of impairment and possibly the sample of play. We will continue to look at this variable in terms of the variance around the mean and the frequency distributions of each group.

In the future we plan to investigate more thoroughly the specific variables which correlate with symbolic play in each of these groups. These variables include verbal and nonverbal IQ, severity of social withdrawal and severity of language disorder. We also plan to evaluate the frequency of functional and symbolic play that was spontaneously produced versus the amount that was elicited by the experimenter.

Finally, we are currently engaged in following these same children in a longitudinal study which includes a play session. We are especially interested in group differences in levels of symbolic play which may remain. Additionally we will look at functional level of children who

acquired symbolic play early versus late. In light of the current findings we believe that play may prove to be a useful prognostic indicator for social and cognitive development, especially for the ASD groups.

References

McCune-Nicolich, L. (1981) Toward symbolic functioning: Structure of early pretend games and potential parallels with language. Child Development, 52, 785 - 797.

Kamhi, A. (1981) Nonlinguistic symbolic and conceptual abilities of language - impaired and normally developing children. Journal of Speech and Hearing Research, 24, 446 - 453.

Riguet, C.B., Taylor, N.D., Benaroya, S and Klein, L.S. (1981) Symbolic play in autistic, down's and normal children of equivalent mental age. Journal of Autism and Developmental Disorders, 11, 439 - 448.

Terrell, B., Schwartz, R.C., Prelock, P.A. and Messick, C.K. (1984) Symbolic play in normal and language - impaired children. Journal of Speech and Hearing Research, 27, 424 - 429.

Ungerer, J.A. and Sigman, M. (1981) Symbolic play and language comprehension in autistic children. Journal of the American Academy of Child Psychiatry, 20, 318 - 337.